

(406) Emulsions and Foams II
Tuesday, Nov 15, 3:15 PM
 Hilton San Francisco Union Square,
 Union Square 25

Clint P. Aichele, Chair
 Christopher Wirth, Co-Chair
 Stephanie Lam, Co-Chair

Sponsored by: Interfacial
 Phenomena

3:15 Paper 406a: On the Origin
 of the Interfacial Phase Transition
 Causing the Stabilization of Water/
 Oil Emulsions by Asphaltene:
 Accounting for Excluded Area Effects
 Through a Lattice Gas Equation of
 State — *Shaghayegh Darjani, Joel
 Koplik, Vincent Pauchard*

3:30 Paper 406b: Aging Oil-
 Water Interfaces with Asphaltene
 Adsorption: Interface Rheology
 and Heterogeneity — *Chih-Cheng
 Chang, Arash Nowbahar, Vincent
 Mansard, Jodi Mecca, Adam Schmitt,
 Tom Kalantar, Tzu-Chi Kuo, Todd M.
 Squires*

3:45 Paper 406c: Novel Colloid
 Chemistry Approach to Resolving
 Emulsions for Fouling Control in
 Steam Crackers — *Erica Pensini,
 Leo Vleugels, Martijn Frissen,
 Kuldeep Wadhwa, Roy van Lier,
 Gerard Kwakkenbos*

4:00 Paper 406d: Mechanisms of
 Pickering Foam Stabilization During
 Bioreactor Operation — *Dane
 A. Grismer, Crista Gregg, Rachel
 Ferguson, Kevin Chang, Douglas
 Osborne, Orlin D. Velev*

4:15 Paper 406e: Formation of
 Multi-Nanoemulsions for Colloidal
 Synthesis — *Mengwen Zhang,
 Paula Malo de Molina, Samir
 Mitragotri, Matthew E. Helgeson*

4:30 Paper 406f: Novel Surfactants
 for Stabilizing CO₂-in-Oil Emulsions
 and Natural Gas-in-Oil Foams for
 Dry Hydraulic Fracturing — *Robert
 M. Enick, Jason J. Lee, Stephen
 Cummings, Eric J. Beckman, Robert
 J. Perry, Shehab Alzobaidi, Keith P.
 Johnston*

4:45 Paper 406g: Water-Oil Janus
 Emulsions: Microfluidic Synthesis
 and Morphology Design — *Xuehui
 Ge, Jianhong Xu, Jian Chen,
 Guangsheng Luo*

5:00 Paper 406h: Multiscale
 Design of Emulsions with Vegetable
 Oils of Promising Amazonian
 Species — *Juliana Erika Cristina
 Cardona Jaramillo, Marcela Piedad
 Carrillo Bautista, Oscar A. Alvarez,
 Andres Fernando González Barrios*

5:15 Paper 406i: Effect of Solid
 Particles on Interfacial Rheology
 and Transient Stability of Water-in-
 Oil Emulsions — *Ashwin Yegya
 Raman, Jarred Kelsey, Nicholas
 Briggs, Jeff White, Steven Crossley,
 Clint P. Aichele*

5:30 Paper 406j: Microstructural
 Origins of Gel-Like Rheology in
 Solid-Stabilized Emulsions — *Max
 Kaganyuk, Ali Mohraz*

**(407) Experimental Methods in
 Adsorption**
Tuesday, Nov 15, 3:15 PM
 Parc 55 San Francisco, Cyril Magnin II

Joshua Thompson, Chair
 Orhan Talu, Co-Chair

Sponsored by: Adsorption and Ion
 Exchange

3:15 Paper 407a: On the
 Limitations of Breakthrough Curve
 Analysis in Fixed-Bed Adsorption —
*James C. Knox, Armin D. Ebner, M.
 Douglas LeVan, James A. Ritter*

3:40 Paper 407b: Using Three
 NIST Reference Zeolite Materials to
 Study the Effect of Pore Metrics on
 the Measurement of High-Pressure
 CO₂ Adsorption Isotherm — *Sterlin
 L. Hudson Michael, Huong Giang
 Nguyen, Jarod C. Horn, Brad M.
 Boyerinas, Matthias Thommes,
 Martin L. Green, Roger D. Van Zee,
 Laura Espinal*

4:05 Paper 407c: Measurement of
 the Density of Microporous Materials
 Needed to Convert Net Adsorption to
 Absolute Adsorption — *Federico L.
 G. Melo, Enzo Mangano, Maria-
 Chiara Ferrari, Célio L. Cavalcante
 Jr., Stefano Brandani*

4:30 Paper 407d: Generalized
 Perturbation Method to Determine
 Multicomponent Isotherm for Saturated
 Systems Through a Modeling-Design
 Concurrent Approach — *Siwei Guo,
 Pranav S. Vengsarkar, Jason Bentley,
 Yoshiaki Kawajiri*

4:55 Paper 407e: Multi-Layer
 Multi-Component Adsorption
 Isotherm Model: Theoretical and
 Experimental Validation — *Ju Weon
 Lee, Andreas Seidel-Morgenstern*

5:20 Paper 407f: Nitrogen
 Interaction with Various 1D and 3D
 Nanostructured Carbon Architectures
 Probed via In-Situ Vibrational
 Spectroscopy — *Paramita Ray,
 Angela D. Lueking, John V. Badding,
 Enshi Xu, Vincent H. Crespi*

**(408) Fluidization and Fluid-
 Particle Systems for Energy and
 Environmental Applications I**
Tuesday, Nov 15, 3:15 PM
 Hotel Nikko San Francisco, Peninsula

Fanxing Li, Chair
 Azita Ahmadzadeh, Co-Chair

Sponsored by: Fluidization and
 Fluid-Particle Systems

3:15 Paper 408a: Chemical
 Looping Combustion for Carbon
 Capture Efficiency — *Rosario
 Porrazzo, Graeme White, Joan
 Cordiner, Raffaella Ocone*

3:34 Paper 408b: Cold Flow
 Model Studies of a Counter-Current
 Moving-Bed Syngas Chemical
 Looping Pilot Unit for High-Purity
 Hydrogen and Electricity Co-
 Generation with Carbon Capture —
*Dawei Wang, Andrew Tong,
 Liang-Shih Fan*

3:53 Paper 408c: Development of
 a Carbon Stripper Particle Separation
 System for Chemical Looping
 Applications — *Ronald W. Breault,
 Steven Rowan, Richard Stehle,
 Michael Bobek*

4:12 Paper 408d: Validation
 of Agglomeration Modeling
 Methodology and Proposed
 Mechanism of Ash Agglomerate
 Growth in Fluidized-Bed
 Combustors — *Aditi Khadilkar,
 Sarma Pisupati, Peter Rozelle*

4:31 Paper 408e: Numerical
 Simulation of the Effects of Size
 Change in a Coal Gasifier Using
 Method-of-Moments Approach —
*Emad Ghadirian, Hamid
 Arastoopour, Javad Abbasian*

4:50 Paper 408f: Study of
 Structured Flow Pattern and Bubble
 Characteristics of a Pulsed Fluidized
 Bed Using Kinetic Theory and
 Turbulence Model — *Zhizhong
 Ding, Mayank Tyagi, Krishnaswamy
 Nandakumar*

5:09 Paper 408g: Powder
 Flow Characterization at Low
 Consolidation: 1. Modeling and
 Experimental Values of Torque
 Estimation — *Hamid Salehi
 Kahrizsangi, Denis Schütz, Diego
 Barletta, Massimo Poletto*

5:28 Paper 408h: CFD-DEM
 Simulation of Tube Erosion in a
 Bubbling Fluidized Bed with a Tube
 Bundle — *Yongzhi Zhao, Lei Xu*

**(409) Fuel Processing for
 Hydrogen Production**
Tuesday, Nov 15, 3:15 PM
 Hilton San Francisco Union Square,
 Van Ness

Dushyant Shekhawat, Chair
 David A. Berry, Co-Chair
 Devendra Pakhare, Co-Chair

Sponsored by: Advances in Fossil
 Energy R&D

3:15 Paper 409a: Advances
 in Autothermal Reformer
 Development — *Steffen Schemme,
 Joachim Pasel, Andreas Tschauder,
 Remzi Can Samsun, Ralf Peters,
 Detlef Stolten*

3:35 Paper 409b: Stable Start-up
 Process for 1 kW_e Diesel Autothermal
 Reformer for Auxiliary Power Unit
 Applications — *Jiwoo Oh, Minseok
 Bae, Dongyeon Kim, Joongmyeon
 Bae, Sai P. Katikaneni*

3:55 Paper 409c: Production
 of Hydrogen via Partial
 Dehydrogenation of Fuels —
*Mélanie Taillades, Jullien Belloc,
 Deborah Jones, Jacques Rozière*

4:15 Paper 409d: Pure Hydrogen
 Production via Methane Catalytic
 Decomposition on a Ni-Based
 Catalyst — *Yongdan Li*

4:35 Paper 409e: Production of
 Hydrogen from Various Feedstock
 Options Using Plasma Reforming —
*Lyman Frost, Joseph Hartvigsen,
 Elango Elangovan, Jessica Elwell*

4:55 Paper 409f: Computational
 Fluid Dynamic Modeling of a
 Microplasma Fuel Reformer —
*Thaieny Zucolotto, R. S. Besser,
 Peter J. Lindner*

5:15 Paper 409g: Syngas
 Production Using Steam/Red Mud
 Gasification of Coal — *Oleksandr
 Hietsoi, Foster A. Agblevor*

5:35 Paper 409h: Hydrogen
 Production from Lignocellulosic
 Biomass Residues via Gasification in
 Supercritical Water: Catalyst Activity
 and Process Optimization Study —
Ajay K. Dalai

